

In FIGS. 2C and 2D, no destination address field (32 in FIGS. 2A and 2B) identifying the message center 22 as the destination for the SMS message transmission is needed because such messages are automatically routed from the mobile station 12 to the message center.

The destination identifier 40 in FIGS. 2A–2D includes both a network designation (identifying the network over which the message is to be transmitted for delivery) 42 and a destination address (identifying the addressee on the designated network to which the message is to be delivered) 44 separated from each other by a colon or other appropriate delimiter (e.g., a hyphen, slash, etc.). In the case of the e-mail and facsimile message formats of FIGS. 2A and 2B for messages generated for initial transmission over one of the other networks 20, the network designation 42 is “SMS” (or any other appropriate designation) identifying the cellular network 10 as the network over which the message is to be transmitted after conversion to an SMS message. The destination address 44 of the identifier 40 is “NPA-NXX-XXXX” identifying the telephone number of the subscriber to whom the SMS message is to be delivered. In the case of the e-mail message format of FIG. 2C, for messages generated for initial transmission over the cellular network 10, the network designation 42 is “LAN” or “WAN” (or any other appropriate designation) identifying the LAN 20(2) or WAN 20(3), respectively, as the network over which the message is to be transmitted after conversion as an e-mail message. The destination address 44 in the identifier 40 is “xxxxx@yyyyy.zzzzz” identifying the network address of the user to whom the e-mail message is to be delivered. This address may comprise an Internet, world wide web or other network address. With the facsimile message format of FIG. 2D, for messages generated for initial transmission over the cellular network 10, the network designation 42 is “FAX” (or any other appropriate designation) identifying the conventional telephone network 20(1) as the network over which the message is to be transmitted after conversion as a facsimile message. The destination address 44 in the identifier 40 is “NPA-NXX-XXXX” identifying the facsimile telephone number of the person to whom the facsimile message is to be delivered.

Reference is now made to FIG. 3 wherein there is shown a flow diagram illustrating operation of the functionality 28 of the message center 22 of the present invention for handling a received inter-network message having one of the formats shown in FIGS. 2A–2D. At step 100, an inter-network message is received by the message center 22 from either the cellular network 10 or other network 20. The received message may comprise a facsimile message or an e-mail message originated in one of the other networks 20 (in one of the formats shown in FIGS. 2A and 2B) and intended for delivery over the cellular network 10 as an SMS message. Alternatively, the received message may comprise an SMS message originated at a mobile station 12 (in one of the formats shown in FIGS. 2C and 2D) and intended for delivery over one of the other networks 20 as a facsimile message or an e-mail message.

Following receipt of the message, the functionality 28 converts the received message. First, analysis of the text field 36 of the message is made to determine in decision step 102 whether a destination identifier 40 has been included. In one embodiment, the destination identifier 40 is found by searching the text field 36 for portions of text surrounded by quotation marks or other appropriate delimiters (e.g., brackets, parenthesis, hyphens, etc.). Alternatively, the destination identifier could be in the first piece of data in the received message (provided the data complies with the

format of the destination identifier 40. In the event no destination identifier 40 is found (branch 106), the received message cannot be automatically delivered by the functionality 28, and is instead output in step 104 to a console or printer where human operator assistance is preferably made available on an “as needed” basis to attend to message delivery. Once the destination identifier 40 is found (branch 108), the network designation 42 portion of the identifier is read in step 110.

If the read network designation 42 comprises the term “FAX”, as in step 112, the functionality 28 extracts the facsimile telephone number “NPA-NXX-XXXX” from the destination address 44 in step 114. Any re-formatting of the received message (in this case an SMS message) necessary for facsimile transmission is then performed in step 116. The conventional telephone network 20(1) is then accessed by the functionality 28 of the message center 22 in step 118 following message conversion, and the received and converted message is delivered as a facsimile message over the accessed network in step 120.

If the read network designation 42 instead comprises the term “LAN”, as in step 122, the functionality 28 extracts the network address “xxxxx@yyyyy.zzzzz” from the destination address 44 in step 124. Any re-formatting of the received message (in this case an SMS message) necessary for LAN e-mail transmission is then performed in step 126. The LAN 20(2) is then accessed by the functionality 28 of the message center 22 in step 128 following message conversion, and the received and converted message is delivered as an e-mail message over the accessed network in step 130.

If the read network designation 42 alternatively comprises the term “WAN”, as in step 132, the functionality 28 extracts the network address “xxxxx@yyyyy.zzzzz” from the destination address 44 in step 134. Any re-formatting of the received message (in this case an SMS message) necessary for WAN e-mail transmission is then performed in step 136. The WAN 20(3) is then accessed by the functionality 28 of the message center 22 in step 138 following message conversion, and the received and converted message is delivered as an e-mail message over the accessed network in step 140.

If the read network designation 42 instead comprises the term “SMS”, as in step 142, the functionality 28 extracts the subscriber mobile station 12 telephone number “NPA-NXX-XXXX” from the destination address 44 in step 144. Any re-formatting of the received message (in this case a facsimile or e-mail message) necessary for SMS message transmission is then performed in step 146. The cellular network 10 is then accessed by the functionality 28 of the message center 22 in step 148 following message conversion, and the received and converted message is delivered as an SMS message over the accessed network in step 150.

If the read network designation 42 alternatively comprises some other term (branch 152), the received message cannot be automatically delivered by the functionality 28, and is instead output in step 104 to a console or printer where human assistance is preferably made available on an “as needed” basis to attend to message delivery.

Although a preferred embodiment of the method and apparatus of the present invention has been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the invention is not limited to the embodiment disclosed, but is capable of numerous rearrangements, modifications and substitutions